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ABSTRACT

A suggested approach for use in schools enrolling Indian children and youth is indicated in this curriculum guide for environmental education. It is pointed out that traditional Indian lifeways and beliefs were and are extremely pertinent to man's living in balance with his natural environment. The guide expresses the belief that the use of the Indianness of the child is the most important part of environmental education for American Indian students. A section on "The Indian Side of Environmental Education" expands this concept, and suggested activities are given for implementation. Potential for developing a strong self-image in Indian students is inherent in the program. Relating the contemporary need for people throughout the world to learn to live in harmony with their surroundings to examples of this balance achieved historically by Indians throughout the Americas is the primary aspect of the program. The program approach calls for involvement of local Indian people in achieving a truly effective educational experience. A section of resources and references includes lists of books, programs, periodicals, bibliographies, national coordinators, national organizations, state directors, consultants, and resource people for environmental education. (JH)

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ENVIRONMENTAL AWARENESS FOR INDIAN EDUCATION

RC 005049

U. S. Department of the Interior

Bureau of Indian Affairs
Louis R. Bruce, Commissioner

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INTRODUCTION

FATHER SKY

May the Rain Makers water Earth
Mother
that she may become beautiful to look
upon.
May the Rain Makers water Earth Mother
that she may give to her children
and to the world
food,
that they may have food
so that the children of the world
may live the span of life
and then sleep
to awaken with their gods.

MOTHER EARTH

The above refrain, an English translation of part of a Zuni Pueblo story, expresses a world-view that is found throughout Indian America. It reflects a total awareness and presence of all "things" that surround humans, yet, accords to these "things" a vitality that makes treatment of natural treasurers a careful and responsible action. That is, Mother Earth, nurtures Life and relates harmoniously to all forms of it. The balance of life forces becomes a reality and, in a sense, reverence for life, which it took a modern-day philosopher a lifetime to evolve and leave as a legacy, looms through the smog as having been here with American peoples far longer than most realize. Living in harmony with nature, preserving and conserving it, have become a contemporary preoccupation of American citizens. They search diligently for some form of behavior that will preserve what is left of the natural beauty of the continent and clean up the overwhelming waste products of a rampant technological society.

Environmental educators can look to no better source than to the traditions of American Indians for guidance and help in developing viable systems for appreciating and understanding nature. Indeed, and more important, contemporary American Indians can look to no better source than to their traditional heritage for ways and means of achieving a rewarding relationship with the lands which surround them. It is hoped that this brief curriculum guide can assist Indian people, their teachers, and their children in enhancing the beauty of reservation life and in finding dignity in their Indian heritage, for it is in their backgrounds we find the reality of Rain Maker and Earth Mother coupled with an understanding of the insuperability of life in all its forms.

THE APPROACH

The introduction of this curriculum guide is an indication to the approach that is suggested for use in schools enrolling Indian children and youth. It points out that traditionally Indian lifeways and beliefs were/are extremely pertinent to Man's living in balance with his natural environment. In fact, the curriculum guide expresses the belief that the use of the Indianness of the child/youth is the most important part of environmental education for American Indian students. The section, "The Indian Side of Environmental Education," expands this concept and the "Suggested Activities" gives further ideas about how it may be implemented. It is important to keep in mind the potential the program holds in developing a strong self-image in Indian students. It is a natural and logical step to relate the contemporary

need, which is almost of crisis dimensions, for people throughout the world to learn how to live in harmony with their surroundings, to those examples of this balance that were achieved historically by Indians throughout in the Americas. This, then, is the top priority aspect of environmental education for American Indians.

A second point of the approach concerns the supplemental nature of the program. The Commissioner pointed out in his Memorandum about the NEED curriculum that is intended to be supplemental to the regular program. Technical curriculum materials that have been developed are excellent and too extensive for the Bureau of Indian Affairs to attempt to improve upon. Therefore, existing curricula in environmental education are recommended and several of these are listed in the section, "Resources and References."

The third point of the approach calls for the involvement of local Indian people in developing the program. This is crucial as it is a key in achieving a truly effective educational experience. It is entirely possible that with full community participation at every step of the way parents would discover related programs that could be relatively easy for them to capitalize upon for the general betterment of the community. Too, the local people know best what their needs are and also how best to supply the Indian side mentioned above.

The last part of the approach gives some objectives that have been developed to go with the program. Review them and see if they fit your local situation. Use them as you see fit and develop new ones as needed. The important fact to keep in mind is that the clearer your objectives, the easier it is to measure progress.

Environmental Education Objectives

To promote environmental education in schools enrolling Indian children and youth.

To reaffirm the spiritual relationship between the Indian and his environment by introducing the student to his cultural and natural environment, past and present, and by helping him realize that he is a part of it.

To promote an understanding of how man is using and misusing his resources.

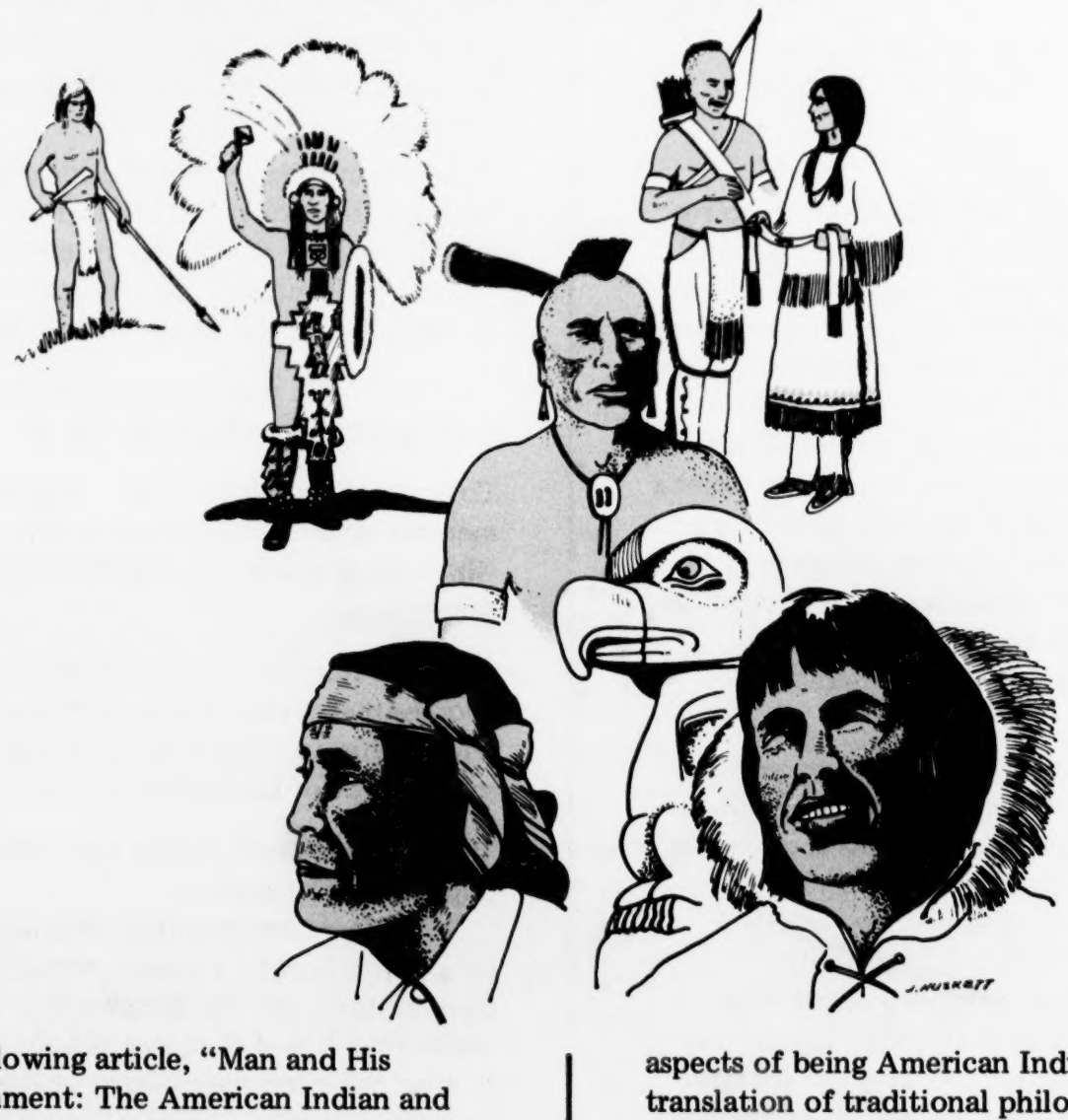
To equip the student to be a responsible member of the tribe, nation and world which are shaping him and which he is shaping.

To relate traditional lifeways of Indian peoples that reflect a close and balanced relationship to natural surroundings to the self-concept of the Indian child/youth.

The Indian student should have the opportunity to acquire.

1. a clear understanding that man is an inseparable part of a system consisting of man, culture, and the bio-physical environment, and that man has the ability to alter the interrelationships of this system;
2. a broad understanding of the bio-physical environment, both natural and man-made;
3. a fundamental understanding of the bio-physical environmental problems confronting man, how these problems can be solved, and the need for individual citizens, tribal groups, and government agencies to work toward their solution;
4. attitudes of concern for the quality of the bio-physical environment which will motivate citizens to participate in bio-physical environment problem solving.

THE INDIAN SIDE OF ENVIRONMENTAL EDUCATION



The following article, "Man and His Environment: The American Indian and the Natural World," was written by Dave Warren, an American Indian scholar who is eminently qualified to write it. Careful reading and consideration of the content will help shape the point of view a community, school, or area may wish to develop that reflects the Indian side and contribution that only the various tribes can make to environmental education.

The most useful and at the same time the most difficult part of the Indian education curriculum in environmental education is embedded in the intellectual-spiritual aspects of being American Indian. The translation of traditional philosophical beliefs into something concrete and educationally effective is a key part of the overall program.

If communities, agencies, schools, or area offices wish technical assistance in the program, please contact the Central Office, Attention Education, Curriculum Division, and every effort will be made to honor the request.

You are encouraged to read Dave Warren's article carefully and completely.

Man and His Environment:

The American Indian and The Natural World

by

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Some guidelines should be set down before beginning our discussion of the spiritual heritage of the American Indian as that heritage relates to current concerns about environmental education. Obviously we must consider our discussion in generalized, perhaps simplistic terms. However, certain basic points are suggested throughout the following discussion that should benefit our investigation of ideas and practices of American Indians in their preception of nature and its relationship to man. Among these considerations we might include:

1. understand the close interrelationship that American Indian civilizations had and, in some cases continues to hold, with natural forces. This understanding is significant in man's accommodation to the unknown, through his search for the reasons for creation, and as a result a clearer comprehension emerges in the role of man and society as functions of the natural world. Studies of myth, religion, philosophy, ethics reveals how these influences affect his attitude toward the understanding and use of nature.

2. understand why certain interpretations of these relationships came into being as a stage of development of Indian philosophical inquiry.

3. realize the influence of natural forces in shaping social, economic, religious and political institutions among American Indian civilizations. Parenthetically, we should realize the dynamic character of this development as it affects American Indians today.

4. understand the manner in which Indian society conserved its environment in techniques and technical concepts of land use, conservation, farming, land organization (this consideration may be more profitably investigated elsewhere than this paper).

At the outset, it may serve our purposes to comment on the world views held by the primitive world. Implied in these generalizations and comments are comparisons between American Indian cultural forces and the values developed in modern society; a society greatly affected by the western European historical tradition.

In considerations of the world around him, man has faced the fact that he must confront or in some manner become oriented to the forces of nature. Whatever alternatives may be considered in this process, all peoples seem to have recognized a prevailing orderliness; chaos is not acceptable. Each civilization seeks the law of nature that governs its existence. In pursuit of this law or order, the cultural view of environment usually encounters a dichotomy in the characteristics of nature: good and bad; ordered law or random capriciousness. These questions then suggest other considerations which man must take if he is to deal with the forces that surround him. Is orderliness in the cosmos viewed as good? Are deviations from this seen as evil? Are deviations from law matters of chance, merely happening, or are they intentional and subject to design? This again leads to how much man can determine his fate or how much he

must yield to the presence of a superhuman will in the universe. In short, is the law of natural orderliness inherent in the things of nature, as part of their very nature; or the result of the imposition of order by another's will? (Redfield, 1953: passim).

American Indian thought has varied in response to questions on the relation between divine will and the order of the universe. The Navajo in somewhat deistic terms felt that the initial creation found in nature occurred at the will of divinities. However, since that early time of creation man was subject to the consequences of personal acts. It was as though the universe was created by forces which now operated subject to laws over which man, as a mortal, no longer had control. For the Pueblos, and others, nature is seen as an organic whole. Man and nature were intimate components in the total structure. Man was responsible for performing specific acts to acknowledge the force of nature and relate that force to the individual and community system of life. We will discuss this point in further detail below.

Generally the involvement of God and nature was characteristic of most ancient and primitive world views. Sky and god, rain and deity were somehow together, aspects of the same thing. The achievement of Hebrew theology in placing God entirely outside the physical universe and attaching all value to God is radical and unique. However, similarly significant was the Greek science which conceived a universe in which order was innate without any reference to God at all.
American Indians progressed like other peoples through stages of philosophical thought from wonderment and fear of natural forces to an accommodation to these forces. The ultimate step was toward assimilation of all forms of nature, including man, in a coherent system.

For the Aztec people, there was also organization to life and the universe. Man was a part of the design. Conceptions of the universe were perhaps more elaborate but essentially were the same as most held by other Indian groups. Essentially the Aztec conceived the development of the cosmos in five eras or epochs all of which represented: the need to find universal foundation to their world; the temporalization of the world into five ages or cycles; the need to find a set of fundamental elements in their creation; the division of space in the universe into directions presided over by specific forces of natures; the concept of perpetual struggle for supremacy as the underlying force by which cosmic events could be understood (Leon-Portilla, 1963: 46-48).

Aztec sages interpreted the eternal struggle for supremacy among four original gods as cause for the cyclical evolutions of the ages of the world. They also saw a coherent nature of universal space. For them, as with the Pueblos, the world was conceived of as horizontal space as an enormous disk of lands surrounded by water, with lands and water divided into the four quadrants of the universe. Embodied in this concept of the world and universe was again a totality that comprised the Nahua world of creation. (Leon-Portilla, 1963: 48, 54).

The Nahuas also believed that movement and life resulted from the harmony achieved by the spatial orientation of the years and the days, i.e., the spatialization of time. So long as this harmony predominated, i.e., so long as the four directions of the universe were each allotted 13 years in every Aztec "century," the present age, the Fifth Sun, would continue to exist. Should this balance be disturbed, another cosmis struggle for supremacy would ensue. Another great earthquake would occur and this time all would perish. (Leon-Portilla, 1953: 54-56).

Aztec philosophers detected a system of which man, nature, the cosmos were all parts. Man and his society were integral components of a great evolutionary process, established over the eons of the past. In summary, this process is described:

> The movement is from rudimentary to higher forms of plants and men. In this manner four Suns have ended; ours is the fifth, the Sun of Movement and for this period a certain harmony — a balance of power among the various cosmic forces — has been achieved. The gods have accepted the alternating distribution of supremacy, orienting it consecutively toward each of the four directions of the universe. From these directions the cosmic forces act and develop. Ours is the age of the spatialized years: years of the direction of light, years of the region of the dead, years of the direction of the house of the sun, and years of the blue zone to the left of the sun. The influence of each direction is felt not only in the physical universe, but also in the life of each mortal. The various influences that endlessly succeed one another can only be revealed by the tonalamatl. The succession is part of a mysterious harmony of tensions which the Nahuatl astrologers seek in vain to understand and to control. (Leon-Portilla, 1965:60).

This passage reveals the basic, albeit on a grander scale, comprehension of an Indian society of the need to harmonize the natural forms through a highly personalized relationship between man and his spiritual and physical environment.

Another measure of the Indian concept of nature can be found among the Iroquois and others of the northeast. Their concept of the use, ownership, and occupation of land offers some interesting insight into the total spiritual and pragmatic relationship of man and nature.

Land was not a commodity to be gained by pillage or price, nor was it subject to sale or lien. Rather, land was often considered a divine gift. As such, land was to be revered as "the mother of man" and source of all sustenance. From the earth the very animals, plants and waters of all life giving significance emerged. Moreover, land was literally the support of man which kept him from falling.(Snyderman, 1951: 15).

In this regard man had to continually give thanks to the Maker and to the plants and animals for allowing use of them for survival.

If the Great Spirit could give the land only he could take it away. There were no concepts of land sales as we might consider them in modern civilization, rather in return for grants of land — which were viewed as gifts — those who gave up their grants might be giving gifts; this was reciprocity and not compensation. (Snyderman, 1951: 16-17).

There is a strong reverence for the land, the earth itself which often underlies the Indian reluctance to adopt some of the modern agricultural equipment. Many of the traditionalists believed that Mother Earth should not be torn by metal spikes or planes, but rather gently tapped with stick or hoe. Further, reverence toward the earth came from the feeling that the earth entombed the remains of ancestors who had preserved the land as the inheritance of modern generations. This was not an attitude of ancestor worship, but more one of love for the very ground which held the departed elders, father, grandfather (Synderman, 1951: 17-18). Similar honor and reverence is paid to Tewa ancestors whose bones may surface during heavy rains at which time the bones are reinterred with accompanying apologies for being disturbed and hopes that their rest has not been too badly interrupted (Warren, 1970). Part of this belief included the idea that

land belonged to all the people who inhabited it. No individual could make personal claim to any part of the land. As a result, no one could sell lands. Obviously much of a basic communal philosophy outlined here ran directly counter to the individualism which characterized the American frontiersman. This situation of conflicting systems led to disintegration of the philosophy with natural ideology so fundamental and integral to Indian attitudes toward the land (Synderman, 1951: 18-19, 30).

The attitudes which one takes toward his environment, whether human or physical, stem a great deal from the basic philosophy and comprehension held toward nature. Here we are perhaps more concerned with the value systems, which, in this case, the Pueblo hold as basic to their way of life. As indicated earlier, many feel that the manner in which Pueblos have survived to this day is found in his grasp of the meaning and role of nature and its forces. Earlier we said that the Pueblo sees nature as an organic whole. This contrasts to the mechanistic view of life held by the western society as produced by technological advance. In this realization, Indians attempt to work with and not against nature. He tries to understand the natural forces and work within them. Modern man too often believes he can control natural forces. Perhaps he has succeeded; however, while manipulating one part of the environment, man has often destroyed the balance of the total design of nature. As a result, new problems, often unmanageable, have occurred. Pollution problems, lack of proper conservation in planning life and use of environment, urban deterioration are some of the most obvious and pressing problems which man has had much to do in creating (Popovi Da, 1970: 25-26).

Realization of these factors in the universe deeply and directly affect the manner in which the Pueblo person approaches government, education and social behavior.

For the Pueblo a person's place is determined at birth. As maturation occurs, one's duties and responsibilities are clearly and logically defined within the scheme of the community and society. Each member of the Pueblo has an important role to play in the community. Working within the community implies not only civic responsibilities but religious requirements.
As such the individual is submerged to the good of the community. Each must perform the tasks of government and religious life to assure that cohesion and continuity occur for the culture. The symmetry of life must be maintained. To allow an empty spot to remain causes imbalance and disruption to life and is contradictory to the concepts of the natural world. (Popovi Da, 1970: 25)

To appreciate the profundity of these precepts and the manner in which they operate in the organization and function of an Indian society, let us look at the Pueblo world and its dynamics.

Pueblo Cycles: Various cycles exist and may be identified by certain *ritual*, *social*, and *political* activities associated with each cycle. Within the cycles are specified "works" performed to insure that desired cyclical changes will continue to occur in nature. One of the more significant characteristics of these activities concerns the continuity of orderly authority between the principal religious-political groups in the village. In mid-January the Winter Chief transfers authority for ruling the pueblo to the Summer Chief. Operating simultaneously within the "political" cycle (Winter-Summer cycle) are other nature-defined activities related to agricultural programs of planning, harvesting, etc., of course involving rituals performed by elements within the Pueblo social structure (Ortiz, 1969: 98-111).

As we can see an entire cycle of works is tied to nature's basic rhythm and to the Tewa's attempt to influence that rhythm for his well being. In this sense it is the structure of structures in Tewa life. The entire cycle includes a harmonious, integrated series of all societies which comprise the Pueblo ceremonial and societal composition. All must act together in a continuous link to continue nature's basic rhythm.

These brief remarks demonstrate the complete integration of the total life of the Indian into the dynamics of nature. In this understanding, man was integral to the survival of all nature. He recognized the interdependence that existed between himself and the elements that surrounded, indeed, were a part of him. To illustrate this attitude, the following incident has been related to me. Among the Tewa, little children have awakened at night, thirsty. The mother of the house would take the child to the pottery container of water and there "awaken" the water by gently stirring the surface. Apologies were made by the mother to the water, acknowledging the weariness of the water for having travelled a long distance in reaching the household. This incident demonstrates a simple, but important fact in our discussion — the Pueblo child was acquainted with the natural elements, in this case, water, not as inanimate objects, but as "beings" whose nature was defined in mortal terms (Warren, 1970). Another example of such a realization, but with more profound implications, concerns the naming ceremony of a child among the Tewa.

For the Pueblos, the ceremony of naming a child represents identification with and initiation into the Tewa society. A central point in this ritual is the use of two ears of corn. The corn symbolizes the founding ancestry of the Tewa people, "Blue Corn Maiden," and "Yellow Corn Mother." The child is blessed with these ears of corn and given his name and identity as a member of the community and society. Later the corn will be placed near the child as a protection. Eventually, the corn will be planted and at some future time will serve as sustenance for the new member of the tribe (Ortiz, 1969: 30-33). The use of corn, its planting in the community and tribal soil are significant as reminders of the child's origin, identity, and destiny. Actions such as this ceremony establish one's relationship with nature which will continue in other ceremonies as well as social and political systems of the pueblo. Again, one is made aware of the integration which exists between himself and nature. Later he will see the application of nature's balance and patterns in human organization of life. The moiety systems, cited in the example of the Winter and Summer groups, are the obvious reflection of a greater division and process of nature. Within those systems, societal balance and organization occur in matters of politics, laws and other definitions of self in the community. A tradition and structure emerge for the people based on observation of the design and pattern of natural forces.

Underlying this system is the imperative: Man must maintain the ritual, both individually and as part of the community; he must perpetuate the sacred contract between god and man.

A generalized picture of the perception of nature would then be described in the following manner. The world was plotted along a temporal plane, defined and limited by natural forces, natural landmarks. Mountains, lakes and other physical features constantly defined to man the relationship he had with the world in concepts of creation, sustaining life, and moral laws which guided society and personal life. Communication with the spirits and forces of life occur at these

geographical points in the environment. Thus in the final analysis, the very product of nature, its physical features, is seen as a manifestation spiritual core of tribal heritage — history, religion, philosophy (Ortiz, 1969: 18-25).

From these remarks one major realization emerges: For the American Indian, the organization and function of the natural world was viewed in moralistic terms as opposed to the technological view which characterized the development of western civilization, particularly from the Renaissance to the present period. For example, disease was viewed in terms of medieval moralistic causes. Disease and sickness came as a result of God's displeasure with man; the microbe had not yet been faulted for these illnesses (Redfield, 1953).

As long as man feels some accountability for his actions to the great natural forces that surround him and perceives his being as a part of the cycles, structure, and other elements of nature then he will never abuse or drastically alter his environment. To do so would simply jeopardize his base of existence and total life system. This, perhaps, is the lesson we should derive from all that we have discussed.

Lest we consider these thoughts as achronistic and irrelevant to current issues, perhaps a review of a recent article by R. Buckminster Fuller, famous for the development of the geodesic dome, is in order. His article, "Commitment to Humanity" (*The Humanist*, May/June, 1970, pp. 28 ff) contains the following observation: In relation to determining the ways in which the individual could be more effective in improving the human condition, Fuller observed:

> It . . . became very clear to me that I should be concerned with reforming the environment and not with reforming human beings. By environment I mean everything in me, not just some things and not just static objects, but the behavior of all nature including, particularly, human beings. I decided to rearrange the scenery; and I became interested in ways in which nature permits the scenery to be arranged.
>
> I became . . . convinced that the phenomenon of entropy, in which all local systems lose energy, meant that every local system is giving off its energy to the environment and, therefore, ordered the environment. All local systems are continually generating change and have periodically.

Fuller searched then for the balance that he felt must exist in this phenomenon. His conviction that nature does balance everything was substantiated by analysis of biology and astronomy. Central to his discourse was Fuller's feeling that man must and could find orderly functions of nature in all processes. However, many times the local structure of functioning of a system might appear disorderly (entropic), and in their uniqueness, these structures seem disharmonious with the other unique and local systems. The key to understanding these local specialized systems had to come through observation of greater systems. As a result he found that:

> Biological systems are producing by photosynthesis orderly molecules that are clearly anti-entropic. Thus, a form of order develops. But I thought that by far the most powerful order that we know is the ability of the human mind to sort and discover principles.

Our discussion has attempted to outline the dynamics of some American Indian societies as the human-nature relationship was organized. For proper perspectives to be drawn on this subject obvious differences

in those societies and modern social organization should be drawn. For example, since early man was deeply dependent on nature for his sustenance and resources by which to survive, it is naturally that keen observations were made on the patterns and influences that nature made upon human beings and their institutions. As a theocratic society, many Indian groups interwove the threads of political, social and economic determinants as part of the total fabric of religion. Religion expressed the acknowledgment spiritual and mystical forces often manifest in natural phenomena. Church and state, science and faith, many other divisions of modern life simply did not characterize the thought or organization of early civilizations.

Buckminster Fuller's remarks remind us we may have come full circle. Having moved through the various phases of man's development and arrived at the peak of technological achievements, we have witnessed the folly of thinking which leads to the conclusion that man can completely conquer his natural surroundings and bend the forces of nature to his will. Whereas early man empirically observed the intricate interrelationships of nature and understood in his way how these relationships might be slightly diverted for his well being, he never attempted the total alteration of nature's laws. Man was immersed in the total system and understood that position as logical and secure. For us today, Mr. Fuller has pointed the approach to reinvestigating the role we have in the total structure. Through the intellect we may have time to synthesize the local systems and assimilate them into the greater patterns which comprise the natural schema. Through science and technology we can reinstate the natural balances. However, it is imperative that a spiritual value also be instilled in the approach to man's place in the ecology of total life. This value may be restudied through some aspects of American Indian life.

Material presented in this paper is based on the following works:

1951. George S. Snyderman. "Concepts of Land Ownership Among the Iroquois and Their Neighbors," Smithsonian Institution, BAE Bulletin no. 149, pp. 15-34.

1953. Paul Radin. **The World of Primitive Man.** Grove Press, Inc.

1953. Robert Redfield. **The Primitive World and its Transformation.** Ithaca, New York: Cornell University Press.

1963. Miguel Leon-Portilla. **Aztec Thought and Culture.** Norman: University of Oklahoma Press.

1969. Alfonso Ortiz. **The Tewa World; Space, Time, Being and Becoming in a Pueblo Society.** Chicago: University of Chicago Press.

1970. R. Buckminster Fuller. "Commitment to Humanity." **The Humanist,** (May/June), pp. 28ff.

1970. Popovi Da. "Indian Values," **The Living Wilderness.** Wilderness Society, Washington, D. C. Vol 34, no. 109 (Spring), pp. 25-26.

1970. Louisita B. Warren, personal communication, September.

The Rising Sun Living in Harmony with Nature

Environmental balance, or learning to live in an overpopulated, polluted world, is an increasing problem for all forms of life. It is reaching crisis dimensions for human life and President Nixon has proclaimed that control of environmental pollution is a major objective of all Federal agencies. In keeping with the general concern for life and with the President's special emphasis of this concern, it is proposed that a curriculum development project be designed that has the teaching and learning of environmental control of and by American Indian children as its major objective.

It is fitting that the approach taken to the project incorporate the unique ecological balance and corresponding world-view that was and is traditionally basic to the lives of most American Indian tribes. This refers specifically to the Navajo belief that the individual is part of the total environment and must live in harmony with it in order to achieve the good life. It was this same belief that made possible the convention of the "Great Spirit" that was frequently referred to in the literature that discusses Indian-White relationships. It was part of the belief of the Eskimo who was cautious about disturbing the nest of a raven lest the elements controlled by the raven be unleashed, thereby causing unwonted hardship. For whatever the tribal explanation and reasoning, the unnecessary disturbance of nature was cause for concern for life itself.

The same can be said of the modern scientific era. The curious aspect is that the technologically sophisticated world of today, which is largely devoid of the thinking and reasoning of the traditional American Indians, has come to the stark reality of the fact that the vast and often colossal disturbances of nature's balance are creating a basic threat to human existence. Though for different reasons and in support of a world-view far different from the traditional American Indians, the modern world is realizing a truth that was a built-in aspect of many traditional beliefs of American Indian tribes. Success in environmental control will probably rest with the ability and wisdom of the greater American society to refrain from disturbing the raven's nest.

In this respect, it would be advantageous to approach the study from the standpoint that traditional American Indian beliefs have utility and dignity, a vital message to be transmitted to today's American citizen. This approach will support a lagging self-concept that is so frequently reported as part of the Indian child's personality in contemporary American society. This study will help redeem the superficial concept of savagery that casts a shadow over Indian lifeways in past times. It will provide a mechanism and a focal point in the ancestral heritage of the children to which they may point with pride. If for no other reason, environmental education approached in this manner for Indian children will provide incalculable benefits.

SUGGESTED ACTIVITIES

SCIENCE

LANGUAGE ARTS

TRIBAL LANGUAGE

ART

CULTURAL ARTS

SOCIAL STUDIES

TRADITIONAL–CULTURAL

The suggested activities for this program are essentially untried and represent stimuli to thinking more than anything else. They are hypothetical and definitely suggestive. Nonetheless, the themes which they attempt to communicate are valid and should be given serious consideration. Please feel free to write for assistance from the Curriculum Division for advice and help in identifying and obtaining pertinent materials and appropriate techniques.

1. Language Arts — Literature that gives translations of Indian beliefs or that may be read from writings in the tribal language are excellent examples of material that may be used to show real Indian contributions. After all, it is the beliefs that cause people to behave in a certain way

that produces a style of living that is in harmony with the natural surroundings. An investigation of available literature concerning Indian writings would be necessary. Fortunately, there has been a great deal of work in this field in recent years so that the quality and quantity of literature has improved considerably.

2. Social Studies — This area of study lends itself naturally to the planning process. It is here that the Indian parent may be introduced to the project and asked to participate in a meaningful school experience. The children and the parents may be asked to look at their community or at something specific such as the school grounds. It is entirely possible that they may wish to improve the general appearance of the school grounds or the local method of garbage disposal. The children may wish to plant flowers or to cultivate small garden plots in order to discover the process of life and its relationship to its environment. The plant process would be related to science but the social control of life; animate and inanimate, would be in the field of the social studies.

Traditional cultural material (ethnography) may be used to learn how the societies of yesteryear lived in order to discover a certain interrelatedness of living and believing. It is the aspect of interrelatedness that is important to the problems of the modern world. Specialization and the proliferation of knowledge, with the boundaries of knowledge or disciplines assuming the form of impregnable walls, creates modern man's dilemma. The Indian shares this modern dilemma though for perhaps different reasons. However, the Indian is fortunate as he can look to his heritage, which is close to him, and find that it can be helpful to his modern problem. Helping to discover this useful information is the purpose of environmental education and the challenge to the teachers.

3. Science — This is the curriculum area that supplies most of the technical knowledge about the how and why of life. Hence, the several modern science curricula that has been developed over the years provide a natural avenue for introducing environmental education. The curriculum specialists in science has developed some usable material in this area which can be supplied upon request. Also, the relationship of science to social control would be very productive.

4. Art — All forms of artistic expression are thought to be close to an effective program in environmental education for Indian children and youth. The art work on the cover of this bulletin is but a slight example of how it can be related to environmental education. Artistic compositions of Indian beliefs, in any form, are at the core of the objective of the program.

There are obviously many, many other ways of implementing a program in environmental education but in the interest of brevity and in an attempt to escape the educationist propensity for unctuous repetition of the obvious, the full development of activities is left to those who will be doing things at the local level.

RESOURCES AND REFERENCES

This section is not intended to be all inclusive but, rather, lists a few references and resources which teachers and librarians may assemble for use by the community, teachers, and students. It is an extension of the activities suggested in the previous section of this Bulletin and is an elaboration of practical content for the program. It should be noted that some consultants, national organizations, and coordinators are mentioned. This is not a comprehensive listing and is intended to give only those known at the time the material was put together for dissemination to Bureau Schools. Please feel free to send additional suggestions to the Central Office of the Bureau of Indian Affairs, Attention: Office of Education and every effort will be made to incorporate them in further editions of the environmental education curriculum bulletin.

There is a dearth of prepared programs for reference. Your school will be supplied with copies of the National Environmental Education Development (NEED) as a base from which to begin work. Adaptations and supplementary materials will need to be prepared at the local school to fit the unique needs of each school. It is anticipated that each school will want to involve staff, students, parents, school board members and the community in

the preparation of additional materials for use in the school.

The Division of Curriculum Development and Review stands ready to be of assistance at all times. Please refer requests, written or telephone to the Curriculum Division.

I. BOOKS

Benarde, Melvin A., **Our Precarious Habitat**, New York, W. W. Norton and Co., Inc., 1970.

The author believes that if we are to cope with actual and potential environmental health problems we must have an informed citizenry. Man's power to manipulate and exploit his world has obscured his appreciation of the damage he inflicts on the environment. He as a scientist regrets that the scientific community has ignored the needs of the general public. This book, written for the general reader, may be helpful to an understanding of what is happening in the world.

Readable at the high school level.

de Bell, Garrett, **The Environmental Handbook**, New York, Ballentine Books, Inc., 1970.

Conservation Science Fair Projects, Soil Conservation Society of America, 7515 N. E. Ankeny Road, Ankeny, Iowa 50021, 1970.

Single copy	$1.00
2-10 copies	.75
11-99 copies	.65

Ehrlich, P., **The Population Bomb**, New York, Ballentine, 1968.

Helfrich, Harold W., Jr. ed., **The Environmental Crisis: Man's Struggle to Live with Himself**, New Haven, Yale University Press, 1970.

A series of lectures "Issues in Environmental Crises" at the Yale University School of Forestry is the basis for this volume. The symposium was planned on the premise that our real problem is the potential destruction of the balanced natural system that sustains life on this planet. The objective is to analyze technological aspects and to probe moral, economic and social facets of the environmental crisis. They hope to stimulate ideas and actions toward a solution.

Readable at the high school level.

Karplus, Dr. Robert and Dr. Herbert Thier, **A New Look at Elementary School Science: Science Curriculum Improvement Study**, New York, Rand McNally and Company, 1967.

Leinwand, Gerald, **Air and Water Pollution**, New York, Washington Square Press, 1969.

This volume was designed to become introductory text material for urban schools. The purpose of the volume is to develop a clear insight into the problem and perhaps create the will and the climate in which problems of air and water pollution can be solved.

Readable at high school level.

Ogden, Samuel R., ed., **America the Vanishing, Rural Life and the Price of Progress**, Battleboro, Vermont, The Stephen Greene Press, 1969.

The editor defines this anthology as "a nostalgic memorial to what was, and a disapproving commentary on what is."

The book is presented in five sections.

1. The Unspoiled Land
2. Years of Spacious Living
3. Going Back to the Soil
4. The Price of Progress
5. Looking for a Silver Lining

Readable at high school level.

Zurhorst, Charles, The Conservation

Fraud, New York, Cowles Book Company, Inc., 1970.

This is a presentation of the author's opinions of conservation, and the work of of conservation organizations and government in water, air and resource conservation. The author believes that the basic trouble is that there is no national policy on conservation. He states that there are more than 100 federal offices, agencies, and committees dealing with conservation programs.

Readable by Junior High students.

II. ENVIRONMENTAL PROGRAMS

National Environmental Education Development (NEED)

Designed through a National Park Service contract. Materials will be provided from the Central Office.

National Environmental Study Area (NESA)

Designed through a National Park Service contract. Materials will be provided from the Central Office. Others are being developed but are not immediately available. We will keep you advised as these programs become known.

III. PERIODICALS

"Environmental Education"
(published quarterly)
(annual subscription $7.50)
Dembar Educational Research Services, Inc.
Box 1605, Madison, Wisconsin 53701

"Environmental Science and Technology"
(published monthly)
(annual subscription rates: members, $5.00; non members, $7.00)
Subscription Service Department
American Chemical Society
1155 Sixteenth Street, N. W.
Washington, D. C. 20036

"Journal of Natural History"
An international journal of taxonomic and general biology.
(annual subscription $26.35)
Taylor and Francis, Ltd.
10-14 Macklin Street
London W C 2 B 5 N F

"Life Sciences"
Part II published quarterly
(annual subscription rates for libraries $50.00)

"National Parks and Conservation Magazine"
(published monthly)
Student membership $6.50.
National Parks and Conservation Association
1701 Eighteenth Street, N. W.
Washington, D. C. 20009

"Nature, International Journal of Science"
(published weekly)
(annual subscription — air freight $48.00)
Subscription Department of
Macmillan (Journals) Ltd.
Brunel Road
Basingstoke
Hampshire, England

"Nature and Resources"
(Free)
Natural Resources Research Division,
Department of Environmental Sciences and Natural Resources Research
UNESCO,
Place de Fontenoy
75 Paris — 7^{e}
France

"Parks and Recreation"
(published monthly)
(annual subscription $7.50)
National Recreation and Park Association
1700 Pennsylvania Avenue, N. W.
Washington, D. C. 20006

"Science"
(published weekly)
(annual subscription, $12.00)
American Association for the Advancement of Science
1515 Massachusetts Avenue, N. W.
Washington, D. C. 20005

"Science News"
(published weekly)
(annual subscription $7.50)
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Subscription Department
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Marion, Ohio 43302

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Your local BLM representative

Your local Forestry representative

Your local Park Service representative

Your local school board members

Your local science teacher

Your local tribal, county or city administrator

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National Council of Social Studies
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National Parks and Conservation
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1701 Eighteenth Street, N. W.
Washington, D. C. 20009

National Recreation and Park Association
1700 Pennsylvania Avenue, N. W.
Washington, D. C. 20006

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Indian Bibliography
Available from, United States Department of Interior, Bureau of Indian Affairs, Office of Education, Division of Instructional Services, Instructional Service Center, Professional Library, P. O. Box 66, Brigham City, Utah 84302.

"Environmental Education for Everyone"
Bibliography of Curriculum Materials for Environmental Studies, March 1970.
Available for 75¢ from
National Education Association
1201 Sixteenth Street, N. W.
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